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Despite reports in lay publications prompted by an article which appeared in the February 18, 2004 Journal of the American Medical Association,¹ antibiotics may be continued without any fear of development of breast cancer, determines the President of the American Academy of Dermatology.

Researchers performed a case-control study in women enrolled in a Washington State health plan. They matched 2,266 women who had newly diagnosed primary breast cancer between 1993 and 2001 with 7,953 controls.

The study of Velicer and associates suggests that long-term use of antibiotics is associated with "an increased risk of incidental and fatal breast cancer."² Bonnie E. Elewski, M.D., President of the American Academy of Dermatology, responds:

First, the link between antibiotics and breast cancer is not biologically plausible. There are animal studies that review links between medications and cancer, including antibiotics, and there is no evidence from these studies that there is a link between antibiotics and breast cancer.

Second, case-control studies cannot establish a causal link by themselves.

Third, the study failed to examine the specificity of the reported association. Specifically, the authors do not provide information on whether other commonly prescribed medications such as antihypertensives, antidepressants, or other agents have been linked to breast cancer.

Fourth, the study does not provide data on other potential confounders including but not limited to body mass, smoking, weight fluctuations, alcohol use, and age at menarche.

Fifth, the patients with breast cancer in this study all had mammography, while only 42% of the control group had mammography within two years of the reference date. Had all the control group patients been studied with mammography, there might be a much higher incidence of breast cancer in the control group, and that in turn would likely have altered the magnitude and statistical significance of the reported association.

Oral Antibiotics and Breast Cancer

In an editorial in the same issue of the JAMA, Ness & Cauley³ point out "A number of strengths lend validity to the study's findings" including:

- Cases and controls were numerous and chosen from a single client source.
- Cancer diagnoses were confirmed using data from the surveillance, epidemiology and end results program.
- Among patients in the highest use of antibiotics, risk of breast cancer was similarly increased regardless of the indication (acne, rosacea, or respiratory tract infections).
- Computerized pharmacy records were used to evaluate antibiotic prescriptions and adjustment was made for a number of potentially confounding facts.

"At the same time, the study methods engendered certain concerns" and the editorial writers expand on the many concerns similar to those elicited by Dr. Elewski. The writers conclude "As is often for reports of new associations, this study provides many (or more) questions than answers."

In a recent issue of Practical Dermatology, the two sides of "Are we Overusing Oral Antibiotics for Acne?" were discussed by James L. Leyden, M.D. and Guy Webster, M.D., dermatologists from Philadelphia.

Dr. Leyden proposes "Yes. Despite exhaustive educational efforts within the specialty, dermatologists continue to overuse antibiotics to manage acne. Treatment strategies must change."

Dr. Webster says "No. Antibiotics continue to play a key role in acne management. As long as we carefully select candidates and exhaust other options, we're not overusing these agents."

Most dermatologists in clinical practice today concur with Dr. Webster.

- Long-term oral antibiotic therapy can only be justified when other treatments have failed or can be predicted to fail based on clinical experience.
- Patients on long-term therapy must also be treated with other modalities such as topical retinoids, benzoyl peroxide and sulphur, or salicylic acid products.
- Steps should be taken to minimize the changes of results emerging, including treatment with higher doses of oral antibiotics.

References

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